

SEQUENCE LISTING

<110> BATTAGLINO, PETER
 FEDER, JOHN N
 MINTIER, GABE
 NELSON, THOMAS C
 RAMANATHAN, CHANDRA S
 WESTPHAL, RYAN
 CACACE, ANGELA
 BARBER, LAUREN
 HAWKEN, DONALD R
 KORNACKER, MICHAEL G

<120> A NOVEL HUMAN G-PROTEIN COUPLED RECEPTOR, HGPRBMY8,
 EXPRESSED HIGHLY IN BRAIN

<130> D0047NP

<140> TBA

<141> 2001-11-13

<150> 60/317166

<151> 2001-09-04

<150> 60/308285

<151> 2001-07-27

<150> 60/268581

<151> 2001-02-14

<150> 60/248285

<151> 2000-11-14

<160> 102

<170> PatentIn Ver. 2.1

<210> 1

<211> 1527

<212> DNA

<213> Homo sapiens

<400> 1

```

atgacgtcca cctgcaccaa cagcacgcgc gagagtaaca gcagccacac gtgcatgccc 60
ctctccaaaa tgcccatcag cctggccccc ggcatcatcc gctcaaccgt gctgggtatc 120
ttcctcgccg cctctttcgt cggcaacata gtgctggcgc tagtggtgca gcgcaagccg 180
cagctgctgc aggtgaccaa ccgttttata ttaacctcc tcgtcaccga cctgctgcag 240
atttcgctcg tggccccctg ggtggtggcc acctctgtgc ctctcttctg gcccctcaac 300
agccacttct gcacggccct ggtagcctc acccactgt tcgccttcgc cagcgtcaac 360
accattgtct tgggtgcagt ggatcgctac ttgtccatca tccacctct ctctaccg 420
tccaagatga ccacgcgcg cggttacctg ctctctatg gcacctggat tgtggccatc 480
ctgcagagca ctctccact ctacggctgg ggccaggtg cctttgatga gcgcaatgct 540
ctctgctcca tgatctgggg ggccagcccc agctacacta ttctcagcgt ggtgtccttc 600
atcgtcattc cactgattgt catgattgcc tgctactccg tgggtgttctg tgcagcccgg 660
aggcagcatg ctctgctgta caatgtcaag agacacagct tggagtgcg agtcaaggac 720
tgtgtggaga atgaggatga agagggagca gagaagaagg aggagttcca ggatgagagt 780
gagtttcgcc gccagcatga aggtgaggtc aaggccaagg agggcagaat ggaagccaag 840
gacggcagcc tgaaggccaa ggaaggaagc acggggacca gtgagagtag tgtagaggcc 900
aggggcagcg aggaggtcag agagagcagc acggtggcca gcgacggcag catggagggt 960

```

aaggaaggca gcaccaaagt tgaggagaac agcatgaagg cagacaaggg tcgcacagag
 1020
 gtcaaccagt gcagcattga cttgggtgaa gatgacatgg agtttgggtga agacgacatc
 1080
 aatttcagtg aggatgacgt cgaggcagtg aacatcccgg agagcctccc acccagtcgt
 1140
 cgtaacagca acagcaaccc tcctctgccc aggtgctacc agtgcaaagc tgctaaagtg
 1200
 atcttcatca tcattttctc ctatgtgcta tccctggggc cctactgctt tttagcagtc
 1260
 ctggccgtgt ggggtgatgt cgaaaccag gtaccccagt gggtgatcac cataatcatc
 1320
 tggcttttct tcctgcagtg ctgcatccac ccctatgtct atggctacat gcacaagacc
 1380
 attaagaagg aaatccagga catgctgaag aagttcttct gcaaggaaaa gccccgaaa
 1440
 gaagatagcc acccagacct gcccggaaca gaggggtggga ctgaaggcaa gattgtccct
 1500
 tcctacgatt ctgctacttt tccttga
 1527

<210> 2
 <211> 508
 <212> PRT
 <213> Homo sapiens

<400> 2
 Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His
 1 5 10 15
 Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile
 20 25 30
 Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly
 35 40 45
 Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln
 50 55 60
 Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln
 65 70 75 80
 Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe
 85 90 95
 Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His
 100 105 110
 Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Leu Val Ser Val Asp
 115 120 125
 Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr
 130 135 140
 Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile
 145 150 155 160
 Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp

165										170					175				
Glu	Arg	Asn	Ala	Leu	Cys	Ser	Met	Ile	Trp	Gly	Ala	Ser	Pro	Ser	Tyr				
			180					185					190						
Thr	Ile	Leu	Ser	Val	Val	Ser	Phe	Ile	Val	Ile	Pro	Leu	Ile	Val	Met				
		195					200					205							
Ile	Ala	Cys	Tyr	Ser	Val	Val	Phe	Cys	Ala	Ala	Arg	Arg	Gln	His	Ala				
	210					215					220								
Leu	Leu	Tyr	Asn	Val	Lys	Arg	His	Ser	Leu	Glu	Val	Arg	Val	Lys	Asp				
225					230					235					240				
Cys	Val	Glu	Asn	Glu	Asp	Glu	Glu	Gly	Ala	Glu	Lys	Lys	Glu	Glu	Phe				
				245					250					255					
Gln	Asp	Glu	Ser	Glu	Phe	Arg	Arg	Gln	His	Glu	Gly	Glu	Val	Lys	Ala				
			260					265					270						
Lys	Glu	Gly	Arg	Met	Glu	Ala	Lys	Asp	Gly	Ser	Leu	Lys	Ala	Lys	Glu				
		275					280					285							
Gly	Ser	Thr	Gly	Thr	Ser	Glu	Ser	Ser	Val	Glu	Ala	Arg	Gly	Ser	Glu				
	290					295					300								
Glu	Val	Arg	Glu	Ser	Ser	Thr	Val	Ala	Ser	Asp	Gly	Ser	Met	Glu	Gly				
305					310					315					320				
Lys	Glu	Gly	Ser	Thr	Lys	Val	Glu	Glu	Asn	Ser	Met	Lys	Ala	Asp	Lys				
				325					330					335					
Gly	Arg	Thr	Glu	Val	Asn	Gln	Cys	Ser	Ile	Asp	Leu	Gly	Glu	Asp	Asp				
			340					345					350						
Met	Glu	Phe	Gly	Glu	Asp	Asp	Ile	Asn	Phe	Ser	Glu	Asp	Asp	Val	Glu				
		355					360					365							
Ala	Val	Asn	Ile	Pro	Glu	Ser	Leu	Pro	Pro	Ser	Arg	Arg	Asn	Ser	Asn				
		370				375					380								
Ser	Asn	Pro	Pro	Leu	Pro	Arg	Cys	Tyr	Gln	Cys	Lys	Ala	Ala	Lys	Val				
385					390					395					400				
Ile	Phe	Ile	Ile	Ile	Phe	Ser	Tyr	Val	Leu	Ser	Leu	Gly	Pro	Tyr	Cys				
				405					410					415					
Phe	Leu	Ala	Val	Leu	Ala	Val	Trp	Val	Asp	Val	Glu	Thr	Gln	Val	Pro				
			420				425						430						
Gln	Trp	Val	Ile	Thr	Ile	Ile	Ile	Trp	Leu	Phe	Phe	Leu	Gln	Cys	Cys				
		435					440					445							
Ile	His	Pro	Tyr	Val	Tyr	Gly	Tyr	Met	His	Lys	Thr	Ile	Lys	Lys	Glu				
	450					455					460								
Ile	Gln	Asp	Met	Leu	Lys	Lys	Phe	Phe	Cys	Lys	Glu	Lys	Pro	Pro	Lys				
465					470					475					480				

Lys Ile Val Pro Ser Tyr Asp Ser Ala Thr Phe Pro
500 505

```
<210> 3
<211> 31
<212> DNA
<213> Homo sapiens
```

<400> 3
gcaacctgtc tcacgccctc tgqctgttgc c 31

```
<210> 4
<211> 22
<212> DNA
<213> Homo sapiens
```

```
<400> 4
agttagttct aaggcaaacc tt                22
```

```
<210> 5
<211> 33
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: HGPRBMY8
sense primer

<400> 5
ggccgaattc gcaacctgtc tcacgccctc tgg 33

```
<210> 6
<211> 36
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: HGPRBMY8
anti-sense primer

<400> 6
ggccgaattc ggacagttca aggtttgcct tagaac 36

```
<210> 7
<211> 490
<212> PRT
<213> Gallus gallus
```

<400> 7
Met His Asn Leu Ser Ala Gln Pro Trp Gln Ala Lys Met Ala Asn Leu
1 5 10 15

Thr	Tyr	Asp	Asn	Val	Thr	Leu	Ser	Asn	Arg	Ser	Glu	Val	Ala	Ile	Gln	
			20					25					30			
Pro	Pro	Thr	Asn	Tyr	Lys	Thr	Val	Glu	Leu	Val	Phe	Ile	Ala	Thr	Val	
		35					40					45				
Thr	Gly	Ser	Leu	Ser	Leu	Val	Thr	Val	Val	Gly	Asn	Ile	Leu	Val	Met	
	50					55					60					
Leu	Ser	Ile	Lys	Val	Asn	Arg	Gln	Leu	Gln	Thr	Val	Asn	Asn	Tyr	Phe	
	65				70					75					80	
Leu	Phe	Ser	Leu	Ala	Cys	Ala	Asp	Leu	Ile	Ile	Gly	Val	Phe	Ser	Met	
				85					90					95		
Asn	Leu	Tyr	Thr	Val	Tyr	Ile	Ile	Lys	Gly	Tyr	Trp	Pro	Leu	Gly	Ala	
			100					105					110			
Val	Val	Cys	Asp	Leu	Trp	Leu	Ala	Leu	Asp	Tyr	Val	Val	Ser	Asn	Ala	
		115					120					125				
Ser	Val	Met	Asn	Leu	Leu	Ile	Ile	Ser	Phe	Asp	Arg	Tyr	Phe	Cys	Val	
	130					135					140					
Thr	Lys	Pro	Leu	Thr	Tyr	Pro	Ala	Arg	Arg	Thr	Thr	Lys	Met	Ala	Gly	
	145				150					155					160	
Leu	Met	Ile	Ala	Ala	Ala	Trp	Ile	Leu	Ser	Phe	Ile	Leu	Trp	Ala	Pro	
				165					170					175		
Ala	Ile	Leu	Phe	Trp	Gln	Phe	Ile	Val	Gly	Lys	Arg	Thr	Val	His	Glu	
			180					185					190			
Arg	Glu	Cys	Tyr	Ile	Gln	Phe	Leu	Ser	Asn	Pro	Ala	Val	Thr	Phe	Gly	
		195					200					205				
Thr	Ala	Ile	Ala	Ala	Phe	Tyr	Leu	Pro	Val	Val	Ile	Met	Thr	Val	Leu	
	210					215					220					
Tyr	Ile	His	Ile	Ser	Leu	Ala	Ser	Arg	Ser	Arg	Val	Arg	Arg	His	Lys	
	225				230					235					240	
Pro	Glu	Ser	Arg	Lys	Glu	Arg	Lys	Gly	Lys	Ser	Leu	Ser	Phe	Phe	Lys	
				245					250					255		
Ala	Pro	Pro	Val	Lys	Gln	Asn	Asn	Asn	Asn	Ser	Pro	Lys	Arg	Ala	Val	
			260					265					270			
Glu	Val	Lys	Glu	Glu	Val	Arg	Asn	Gly	Lys	Val	Asp	Asp	Gln	Pro	Ser	
		275					280					285				
Ala	Gln	Thr	Glu	Ala	Thr	Gly	Gln	Gln	Glu	Glu	Lys	Glu	Thr	Ser	Asn	
	290					295					300					
Glu	Ser	Ser	Thr	Val	Ser	Met	Thr	Gln	Thr	Thr	Lys	Asp	Lys	Pro	Thr	
	305				310					315					320	
Thr	Glu	Ile	Leu	Pro	Ala	Gly	Gln	Gly	Gln	Ser	Pro	Ala	His	Pro	Arg	

325

.330

335

Val Asn Pro Thr Ser Lys Trp Ser Lys Ile Lys Ile Val Thr Lys Gln
340 345 350

Thr Gly Thr Glu Ser Val Thr Ala Ile Glu Ile Val Pro Ala Lys Ala
355 360 365

Gly Ala Ser Asp His Asn Ser Leu Ser Asn Ser Arg Pro Ala Asn Val
370 375 380

Ala Arg Lys Phe Ala Ser Ile Ala Arg Ser Gln Val Arg Lys Lys Arg
385 390 395 400

Gln Met Ala Ala Arg Glu Lys Lys Val Thr Arg Thr Ile Phe Ala Ile
405 410 415

Leu Leu Ala Phe Ile Leu Thr Trp Thr Pro Tyr Asn Val Met Val Leu
420 425 430

Ile Asn Thr Phe Cys Glu Thr Cys Val Pro Glu Thr Val Trp Ser Ile
435 440 445

Gly Tyr Trp Leu Cys Tyr Val Asn Ser Thr Ile Asn Pro Ala Cys Tyr
450 455 460

Ala Leu Cys Asn Ala Thr Phe Lys Lys Thr Phe Lys His Leu Leu Met
465 470 475 480

Cys Gln Tyr Arg Asn Ile Gly Thr Ala Arg
485 490

<210> 8

<211> 488

<212> PRT

<213> Caenorhabditis elegans

<400> 8

Met Cys Phe Ala Glu Lys Gly Glu Gly Ala Gly Glu Asp Val Asp His
1 5 10 15

His Ser Leu Phe Cys Pro Lys Lys Leu Val Gly Asn Leu Lys Gly Phe
20 25 30

Ile Arg Asn Gln Tyr His Gln His Glu Thr Ile Gln Ile Leu Lys Gly
35 40 45

Ser Ala Leu Phe Leu Leu Val Leu Trp Thr Ile Phe Ala Asn Ser Leu
50 55 60

Val Phe Ile Val Leu Tyr Lys Asn Pro Arg Leu Gln Thr Val Pro Asn
65 70 75 80

Leu Leu Val Gly Asn Leu Ala Phe Ser Asp Leu Ala Leu Gly Leu Ile
85 90 95

Val Leu Pro Leu Ser Ser Val Tyr Ala Ile Ala Gly Glu Trp Val Phe
100 105 110

Pro Asp Ala Leu Cys Glu Val Phe Val Ser Ala Asp Ile Leu Cys Ser
 115 120 125
 Thr Ala Ser Ile Trp Asn Leu Ser Ile Val Gly Leu Asp Arg Tyr Trp
 130 135 140
 Ala Ile Thr Ser Pro Val Ala Tyr Met Ser Lys Arg Asn Lys Arg Thr
 145 150 155 160
 Ala Gly Ile Met Ile Leu Ser Val Trp Ile Ser Ser Ala Leu Ile Ser
 165 170 175
 Leu Ala Pro Leu Leu Gly Trp Lys Gln Thr Ala Gln Thr Pro Asn Leu
 180 185 190
 Ile Tyr Glu Lys Asn Asn Thr Val Arg Gln Cys Thr Phe Leu Asp Leu
 195 200 205
 Pro Ser Tyr Thr Val Tyr Ser Ala Thr Gly Ser Phe Phe Ile Pro Thr
 210 215 220
 Leu Leu Met Phe Phe Val Tyr Phe Lys Ile Tyr Gln Ala Phe Ala Lys
 225 230 235 240
 His Arg Ala Arg Gln Ile Tyr Arg Gln Lys Val Ile Arg Lys His Ile
 245 250 255
 Glu Ser Thr Ile Leu His Glu Ile Ser His Val Leu Pro Thr Ser Asp
 260 265 270
 Glu Phe Ala Lys Glu Glu Glu Glu Glu Glu Asp Ser Glu Ser Ser Gly
 275 280 285
 Gln Val Glu Asn Gly Leu Gly Asn Gly Asn Asp Ala Ile Ile Glu Glu
 290 295 300
 Asp Glu Cys Glu Asp Glu Asp Ser Asp Glu Lys Arg Asp Asp His Thr
 305 310 315 320
 Ser Met Thr Thr Val Thr Ala Thr Val Thr Gly Pro Thr Glu Ala Pro
 325 330 335
 Tyr Met Lys Arg Glu Ala Lys Ile Ser Lys Ser Val Pro Ile Glu Lys
 340 345 350
 Glu Ser Ala Ile Gln Lys Arg Glu Ala Lys Pro Met Arg Ser Val Met
 355 360 365
 Ala Ile Ser Tyr Glu Lys Val Lys Arg His Lys Asn Arg Lys Glu Arg
 370 375 380
 Ile Tyr Arg Lys Ser Leu Gln Arg Lys Pro Lys Ala Ile Ser Ala Ala
 385 390 395 400
 Lys Glu Arg Arg Gly Val Lys Val Leu Gly Ile Ile Leu Gly Cys Phe
 405 410 415
 Thr Val Cys Trp Ala Pro Phe Phe Thr Met Tyr Val Leu Val Gln Phe

```
<210> 9
<211> 423
<212> PRT
<213> Homo sapiens
```

8

Thr Phe Gly Ala Phe Tyr Ile Pro Leu Ile Leu Met Leu Val Leu Tyr
 210 215 220
 Gly Arg Ile Phe Lys Ala Ala Arg Phe Arg Ile Arg Lys Thr Val Lys
 225 230 235 240
 Lys Thr Glu Lys Ala Lys Ala Ser Asp Met Cys Leu Thr Leu Ser Pro
 245 250 255
 Ala Val Phe His Lys Arg Ala Asn Gly Asp Ala Val Ser Ala Glu Trp
 260 265 270
 Lys Arg Gly Tyr Lys Phe Lys Pro Ser Ser Pro Cys Ala Asn Gly Ala
 275 280 285
 Val Arg His Gly Glu Glu Met Glu Ser Leu Glu Ile Ile Glu Val Asn
 290 295 300
 Ser Asn Ser Lys Thr His Leu Pro Leu Pro Asn Thr Pro Gln Ser Ser
 305 310 315 320
 Ser His Glu Asn Ile Asn Glu Lys Thr Thr Gly Thr Arg Arg Lys Ile
 325 330 335
 Ala Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met
 340 345 350
 Gly Thr Phe Ile Phe Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val
 355 360 365
 Leu Pro Phe Cys Ala Glu Asn Cys Tyr Met Pro Glu Trp Leu Gly Ala
 370 375 380
 Val Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Ile Ile
 385 390 395 400
 Tyr Ala Tyr Phe Asn Lys Asp Phe Gln Ser Ala Phe Lys Lys Ile Leu
 405 410 415
 Arg Cys Lys Phe His Arg His
 420

<210> 10
 <211> 421
 <212> PRT
 <213> Mus musculus

<400> 10
 Met Asp Met Phe Ser Leu Gly Gln Gly Asn Asn Thr Thr Thr Ser Leu
 1 5 10 15
 Glu Pro Phe Gly Thr Gly Gly Asn Asp Thr Gly Leu Ser Asn Val Thr
 20 25 30
 Phe Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
 35 40 45

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
 50 55 60
 Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
 65 70 75 80
 Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr
 85 90 95
 Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe
 100 105 110
 Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys
 115 120 125
 Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr
 130 135 140
 Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr
 145 150 155 160
 Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg
 165 170 175
 Ala Pro Glu Asp Arg Ser Asn Pro Asn Glu Cys Thr Ile Ser Lys Asp
 180 185 190
 His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu
 195 200 205
 Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe
 210 215 220
 Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Lys Gly Ala Gly Thr
 225 230 235 240
 Ser Phe Gly Thr Ser Ser Ala Pro Pro Pro Lys Lys Ser Leu Asn Gly
 245 250 255
 Gln Pro Gly Ser Gly Asp Cys Arg Arg Ser Ala Glu Asn Arg Ala Val
 260 265 270
 Gly Thr Pro Cys Ala Asn Gly Ala Val Arg Gln Gly Glu Asp Asp Ala
 275 280 285
 Thr Leu Glu Val Ile Glu Val His Arg Val Gly Asn Ser Lys Gly Asp
 290 295 300
 Leu Pro Leu Pro Ser Glu Ser Gly Ala Thr Ser Tyr Val Pro Ala Cys
 305 310 315 320
 Leu Glu Arg Lys Asn Glu Arg Thr Ala Glu Ala Lys Arg Lys Met Ala
 325 330 335
 Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly
 340 345 350
 Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu
 355 360 365

Pro Phe Cys Glu Ser Ser Cys His Met Pro Glu Leu Leu Gly Ala Ile
370 375 380

Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
385 390 395 400

Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys
405 410 415

Cys Lys Phe Cys Arg
420

<210> 11

<211> 423

<212> PRT

<213> Fugu rubripes

<400> 11

Met Asp Leu Arg Ala Thr Ser Ser Asn Asp Ser Asn Ala Thr Ser Gly
1 5 10 15

Tyr Ser Asp Thr Ala Ala Val Asp Trp Asp Glu Gly Glu Asn Ala Thr
20 25 30

Gly Ser Gly Ser Leu Pro Asp Pro Glu Leu Ser Tyr Gln Ile Ile Thr
35 40 45

Ser Leu Phe Leu Gly Ala Leu Ile Leu Cys Ser Ile Phe Gly Asn Ser
50 55 60

Cys Val Val Ala Ala Ile Ala Leu Glu Arg Ser Leu Gln Asn Val Ala
65 70 75 80

Asn Tyr Leu Ile Gly Ser Leu Ala Val Thr Asp Leu Met Val Ser Val
85 90 95

Leu Val Leu Pro Met Ala Ala Leu Tyr Gln Val Leu Asn Lys Trp Thr
100 105 110

Leu Gly Gln Asp Ile Cys Asp Leu Phe Ile Ala Leu Asp Val Leu Cys
115 120 125

Cys Thr Ser Ser Ile Leu His Leu Cys Ala Ile Ala Leu Asp Arg Tyr
130 135 140

Trp Ala Ile Thr Asp Pro Ile Asp Tyr Val Asn Lys Arg Thr Pro Arg
145 150 155 160

Arg Ala Ala Val Leu Ile Ser Val Thr Trp Leu Ile Gly Phe Ser Ile
165 170 175

Ser Ile Pro Pro Met Leu Gly Trp Arg Ser Ala Glu Asp Arg Ala Asn
180 185 190

Pro Asp Ala Cys Ile Ile Ser Gln Asp Pro Gly Tyr Thr Ile Tyr Ser
195 200 205

Thr Phe Gly Ala Phe Tyr Ile Pro Leu Ile Leu Met Leu Val Leu Tyr
 210 215 220
 Gly Arg Ile Phe Lys Ala Ala Arg Phe Arg Ile Arg Lys Thr Val Lys
 225 230 235 240
 Lys Thr Glu Lys Ala Lys Ala Ser Asp Met Cys Leu Thr Leu Ser Pro
 245 250 255
 Ala Val Phe His Lys Arg Ala Asn Gly Asp Ala Val Ser Ala Glu Trp
 260 265 270
 Lys Arg Gly Tyr Lys Phe Lys Pro Ser Ser Pro Cys Ala Asn Gly Ala
 275 280 285
 Val Arg His Gly Glu Glu Met Glu Ser Leu Glu Ile Ile Glu Val Asn
 290 295 300
 Ser Asn Ser Lys Thr His Leu Pro Leu Pro Asn Thr Pro Gln Ser Ser
 305 310 315 320
 Ser His Glu Asn Ile Asn Glu Lys Thr Thr Gly Thr Arg Arg Lys Ile
 325 330 335
 Ala Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met
 340 345 350
 Gly Thr Phe Ile Phe Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val
 355 360 365
 Leu Pro Phe Cys Ala Glu Asn Cys Tyr Met Pro Glu Trp Leu Gly Ala
 370 375 380
 Val Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Ile Ile
 385 390 395 400
 Tyr Ala Tyr Phe Asn Lys Asp Phe Gln Ser Ala Phe Lys Lys Ile Leu
 405 410 415
 Arg Cys Lys Phe His Arg His
 420

<210> 12

<211> 509

<212> PRT

<213> *Lymnaea stagnalis*

<400> 12

Met Ala Asn Phe Thr Phe Gly Asp Leu Ala Leu Asp Val Ala Arg Met
 1 5 10 15

Gly Gly Leu Ala Ser Thr Pro Ser Gly Leu Arg Ser Thr Gly Leu Thr
 20 25 30

Thr Pro Gly Leu Ser Pro Thr Gly Leu Val Thr Ser Asp Phe Asn Asp
 35 40 45

Ser Tyr Gly Leu Thr Gly Gln Phe Ile Asn Gly Ser His Ser Ser Arg

50					55					60					
Ser	Arg	Asp	Asn	Ala	Ser	Ala	Asn	Asp	Thr	Ser	Ala	Thr	Asn	Met	Thr
65					70					75					80
Asp	Asp	Arg	Tyr	Trp	Ser	Leu	Thr	Val	Tyr	Ser	His	Glu	His	Leu	Val
				85					90					95	
Leu	Thr	Ser	Val	Ile	Leu	Gly	Leu	Phe	Val	Leu	Cys	Cys	Ile	Ile	Gly
			100					105					110		
Asn	Cys	Phe	Val	Ile	Ala	Ala	Val	Met	Leu	Glu	Arg	Ser	Leu	His	Asn
		115					120					125			
Val	Ala	Asn	Tyr	Leu	Ile	Leu	Ser	Leu	Ala	Val	Ala	Asp	Leu	Met	Val
	130					135					140				
Ala	Val	Leu	Val	Met	Pro	Leu	Ser	Val	Val	Ser	Glu	Ile	Ser	Lys	Val
145						150					155				160
Trp	Phe	Leu	His	Ser	Glu	Val	Cys	Asp	Met	Trp	Ile	Ser	Val	Asp	Val
				165					170					175	
Leu	Cys	Cys	Thr	Ala	Ser	Ile	Leu	His	Leu	Val	Ala	Ile	Ala	Met	Asp
			180					185						190	
Arg	Tyr	Trp	Ala	Val	Thr	Ser	Ile	Asp	Tyr	Ile	Arg	Arg	Arg	Ser	Ala
		195					200					205			
Arg	Arg	Ile	Leu	Leu	Met	Ile	Met	Val	Val	Trp	Ile	Val	Ala	Leu	Phe
		210				215					220				
Ile	Ser	Ile	Pro	Pro	Leu	Phe	Gly	Trp	Arg	Asp	Pro	Asn	Asn	Asp	Pro
225						230					235				240
Asp	Lys	Thr	Gly	Thr	Cys	Ile	Ile	Ser	Gln	Asp	Lys	Gly	Tyr	Thr	Ile
				245					250					255	
Phe	Ser	Thr	Val	Gly	Ala	Phe	Tyr	Leu	Pro	Met	Leu	Val	Met	Met	Ile
			260					265					270		
Ile	Tyr	Ile	Arg	Ile	Trp	Leu	Val	Ala	Arg	Ser	Arg	Ile	Arg	Lys	Asp
		275				280						285			
Lys	Phe	Gln	Met	Thr	Lys	Ala	Arg	Leu	Lys	Thr	Glu	Glu	Thr	Thr	Leu
	290					295					300				
Val	Ala	Ser	Pro	Lys	Thr	Glu	Tyr	Ser	Val	Val	Ser	Asp	Cys	Asn	Gly
305						310					315				320
Cys	Asn	Ser	Pro	Asp	Ser	Thr	Thr	Glu	Lys	Lys	Lys	Arg	Arg	Ala	Pro
				325					330					335	
Phe	Lys	Ser	Tyr	Gly	Cys	Ser	Pro	Arg	Pro	Glu	Arg	Lys	Lys	Asn	Arg
			340					345						350	
Ala	Lys	Lys	Leu	Pro	Glu	Asn	Ala	Asn	Gly	Val	Asn	Ser	Asn	Ser	Ser
		355					360					365			

Ser Ser Glu Arg Leu Lys Gln Ile Gln Ile Glu Thr Ala Glu Ala Phe
 370 375 380
 Ala Asn Gly Cys Ala Glu Glu Ala Ser Ile Ala Met Leu Glu Arg Gln
 385 390 395 400
 Cys Asn Asn Gly Lys Lys Ile Ser Ser Asn Asp Thr Pro Tyr Ser Arg
 405 410 415
 Thr Arg Glu Lys Leu Glu Leu Lys Arg Glu Arg Lys Ala Ala Arg Thr
 420 425 430
 Leu Ala Ile Ile Thr Gly Ala Phe Leu Ile Cys Trp Leu Pro Phe Phe
 435 440 445
 Ile Ile Ala Leu Ile Gly Pro Phe Val Asp Pro Glu Gly Ile Pro Pro
 450 455 460
 Phe Ala Arg Ser Phe Val Leu Trp Leu Gly Tyr Phe Asn Ser Leu Leu
 465 470 475 480
 Asn Pro Ile Ile Tyr Thr Ile Phe Ser Pro Glu Phe Arg Ser Ala Phe
 485 490 495
 Gln Lys Ile Leu Phe Gly Lys Tyr Arg Arg Gly His Arg
 500 505

<210> 13

<211> 572

<212> PRT

<213> Homo sapiens

<400> 13

Met Thr Phe Arg Asp Leu Leu Ser Val Ser Phe Glu Gly Pro Arg Pro
 1 5 10 15
 Asp Ser Ser Ala Gly Gly Ser Ser Ala Gly Gly Gly Gly Gly Ser Ala
 20 25 30
 Gly Gly Ala Ala Pro Ser Glu Gly Pro Ala Val Gly Gly Val Pro Gly
 35 40 45
 Gly Ala Gly Gly Gly Gly Gly Val Val Gly Ala Gly Ser Gly Glu Asp
 50 55 60
 Asn Arg Ser Ser Ala Gly Glu Pro Gly Ser Ala Gly Ala Gly Gly Asp
 65 70 75 80
 Val Asn Gly Thr Ala Ala Val Gly Gly Leu Val Val Ser Ala Gln Gly
 85 90 95
 Val Gly Val Gly Val Phe Leu Ala Ala Phe Ile Leu Met Ala Val Ala
 100 105 110
 Gly Asn Leu Leu Val Ile Leu Ser Val Ala Cys Asn Arg His Leu Gln
 115 120 125
 Thr Val Thr Asn Tyr Phe Ile Val Asn Leu Ala Val Ala Asp Leu Leu

130					135					140					
Leu	Ser	Ala	Thr	Val	Leu	Pro	Phe	Ser	Ala	Thr	Met	Glu	Val	Leu	Gly
145					150					155					160
Phe	Trp	Ala	Phe	Gly	Arg	Ala	Phe	Cys	Asp	Val	Trp	Ala	Ala	Val	Asp
				165					170					175	
Val	Leu	Cys	Cys	Thr	Ala	Ser	Ile	Leu	Ser	Leu	Cys	Thr	Ile	Ser	Val
			180					185					190		
Asp	Arg	Tyr	Val	Gly	Val	Arg	His	Ser	Leu	Lys	Tyr	Pro	Ala	Ile	Met
		195					200					205			
Thr	Glu	Arg	Lys	Ala	Ala	Ala	Ile	Leu	Ala	Leu	Leu	Trp	Val	Val	Ala
	210					215					220				
Leu	Val	Val	Ser	Val	Gly	Pro	Leu	Leu	Gly	Trp	Lys	Glu	Pro	Val	Pro
225					230					235					240
Pro	Asp	Glu	Arg	Phe	Cys	Gly	Ile	Thr	Glu	Glu	Ala	Gly	Tyr	Ala	Val
				245					250					255	
Phe	Ser	Ser	Val	Cys	Ser	Phe	Tyr	Leu	Pro	Met	Ala	Val	Ile	Val	Val
			260					265					270		
Met	Tyr	Cys	Arg	Val	Tyr	Val	Val	Ala	Arg	Ser	Thr	Thr	Arg	Ser	Leu
		275					280					285			
Glu	Ala	Gly	Val	Lys	Arg	Glu	Arg	Gly	Lys	Ala	Ser	Glu	Val	Val	Leu
	290					295					300				
Arg	Ile	His	Cys	Arg	Gly	Ala	Ala	Thr	Gly	Ala	Asp	Gly	Ala	His	Gly
305					310					315					320
Met	Arg	Ser	Ala	Lys	Gly	His	Thr	Phe	Arg	Ser	Ser	Leu	Ser	Val	Arg
				325					330					335	
Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys	Thr	Leu	Ala	Ile
			340					345					350		
Val	Val	Gly	Val	Phe	Val	Leu	Cys	Trp	Phe	Pro	Phe	Phe	Phe	Val	Leu
		355					360					365			
Pro	Leu	Gly	Ser	Leu	Phe	Pro	Gln	Leu	Lys	Pro	Ser	Glu	Gly	Val	Phe
	370					375					380				
Lys	Val	Ile	Phe	Trp	Leu	Gly	Tyr	Phe	Asn	Ser	Cys	Val	Asn	Pro	Leu
385					390					395					400
Ile	Tyr	Pro	Cys	Ser	Ser	Arg	Glu	Phe	Lys	Arg	Ala	Phe	Leu	Arg	Leu
				405					410					415	
Leu	Arg	Cys	Gln	Cys	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Pro	Leu	Trp	Arg
			420					425					430		
Val	Tyr	Gly	His	His	Trp	Arg	Ala	Ser	Thr	Ser	Gly	Leu	Arg	Gln	Asp
		435					440					445			

Cys Ala Pro Ser Ser Gly Asp Ala Pro Pro Gly Ala Pro Leu Ala Leu
 450 455 460
 Thr Ala Leu Pro Asp Pro Asp Pro Glu Pro Pro Gly Thr Pro Glu Met
 465 470 475 480
 Gln Ala Pro Val Ala Ser Arg Arg Lys Pro Pro Ser Ala Phe Arg Glu
 485 490 495
 Trp Arg Leu Leu Gly Pro Phe Arg Arg Pro Thr Thr Gln Leu Arg Ala
 500 505 510
 Lys Val Ser Ser Leu Ser His Lys Ile Arg Ala Gly Gly Ala Gln Arg
 515 520 525
 Ala Glu Ala Ala Cys Ala Gln Arg Ser Glu Val Glu Ala Val Ser Leu
 530 535 540
 Gly Val Pro His Glu Val Ala Glu Gly Ala Thr Cys Gln Ala Tyr Glu
 545 550 555 560
 Leu Ala Asp Tyr Ser Asn Leu Arg Glu Thr Asp Ile
 565 570

<210> 14
 <211> 562
 <212> PRT
 <213> Mus musculus

<400> 14
 Met Thr Phe Arg Asp Ile Leu Ser Val Thr Phe Glu Gly Pro Arg Ala
 1 5 10 15
 Ser Ser Ser Thr Gly Gly Ser Gly Ala Gly Gly Gly Ala Gly Thr Val
 20 25 30
 Gly Pro Glu Gly Pro Ala Val Gly Gly Val Pro Gly Ala Thr Gly Gly
 35 40 45
 Ser Ala Val Val Gly Thr Gly Ser Gly Glu Asp Asn Gln Ser Ser Thr
 50 55 60
 Ala Glu Ala Gly Ala Ala Ala Ser Gly Glu Val Asn Gly Ser Ala Ala
 65 70 75 80
 Val Gly Gly Leu Val Val Ser Ala Gln Gly Val Gly Val Gly Val Phe
 85 90 95
 Leu Ala Ala Phe Ile Leu Thr Ala Val Ala Gly Asn Leu Leu Val Ile
 100 105 110
 Leu Ser Val Ala Cys Asn Arg His Leu Gln Thr Val Thr Asn Tyr Phe
 115 120 125
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Ser Ala Ala Val Leu
 130 135 140
 Pro Phe Ser Ala Thr Met Glu Val Leu Gly Phe Trp Pro Phe Gly Arg

145					150					155				160	
Thr	Phe	Cys	Asp	Val	Trp	Ala	Ala	Val	Asp	Val	Leu	Cys	Cys	Thr	Ala
				165					170					175	
Ser	Ile	Leu	Ser	Leu	Cys	Thr	Ile	Ser	Val	Asp	Arg	Tyr	Val	Gly	Val
			180					185					190		
Arg	His	Ser	Leu	Lys	Tyr	Pro	Ala	Ile	Met	Thr	Glu	Arg	Lys	Ala	Ala
		195					200					205			
Ala	Ile	Leu	Ala	Leu	Leu	Trp	Ala	Val	Ala	Leu	Val	Val	Ser	Val	Gly
	210					215					220				
Pro	Leu	Leu	Gly	Trp	Lys	Glu	Pro	Val	Pro	Pro	Asp	Glu	Arg	Phe	Cys
225					230					235					240
Gly	Ile	Thr	Glu	Glu	Val	Gly	Tyr	Ala	Ile	Phe	Ser	Ser	Val	Cys	Ser
				245					250					255	
Phe	Tyr	Leu	Pro	Met	Ala	Val	Ile	Val	Val	Met	Tyr	Cys	Arg	Val	Tyr
			260					265					270		
Val	Val	Ala	Arg	Ser	Thr	Thr	Arg	Ser	Leu	Glu	Ala	Gly	Ile	Lys	Arg
		275					280					285			
Glu	Pro	Gly	Lys	Ala	Ser	Glu	Val	Val	Leu	Arg	Ile	His	Cys	Arg	Gly
	290					295					300				
Ala	Ala	Thr	Ser	Ala	Lys	Gly	Asn	Pro	Gly	Thr	Gln	Ser	Ser	Lys	Gly
305					310					315					320
His	Thr	Leu	Arg	Ser	Ser	Leu	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg
				325					330					335	
Glu	Lys	Lys	Ala	Ala	Lys	Thr	Leu	Ala	Ile	Val	Val	Gly	Val	Phe	Val
			340					345					350		
Leu	Cys	Trp	Phe	Pro	Phe	Phe	Phe	Val	Leu	Pro	Leu	Gly	Ser	Leu	Phe
		355					360					365			
Pro	Gln	Leu	Lys	Pro	Ser	Glu	Gly	Val	Phe	Lys	Val	Ile	Phe	Trp	Leu
	370					375					380				
Gly	Tyr	Phe	Asn	Ser	Cys	Val	Asn	Pro	Leu	Ile	Tyr	Pro	Cys	Ser	Ser
385					390					395					400
Arg	Glu	Phe	Lys	Arg	Ala	Phe	Leu	Arg	Leu	Leu	Arg	Cys	Gln	Cys	Arg
				405					410					415	
Arg	Arg	Arg	Arg	Arg	Leu	Trp	Pro	Ser	Leu	Arg	Pro	Pro	Leu	Ala	Ser
				420				425					430		
Leu	Asp	Arg	Arg	Pro	Ala	Leu	Arg	Leu	Cys	Pro	Gln	Pro	Ala	His	Arg
			435				440					445			
Thr	Pro	Arg	Gly	Ser	Pro	Ser	Pro	His	Cys	Thr	Pro	Arg	Pro	Gly	Leu
	450					455					460				

Arg Arg His Ala Gly Gly Ala Gly Phe Gly Leu Arg Pro Ser Lys Ala
 465 470 475 480
 Ser Leu Arg Leu Arg Glu Trp Arg Leu Leu Gly Pro Leu Gln Arg Pro
 485 490 495
 Thr Thr Gln Leu Arg Ala Lys Val Ser Ser Leu Ser His Lys Phe Arg
 500 505 510
 Ser Gly Gly Ala Arg Arg Ala Glu Thr Ala Cys Ala Leu Arg Ser Glu
 515 520 525
 Val Glu Ala Val Ser Leu Asn Val Pro Gln Asp Gly Ala Glu Ala Val
 530 535 540
 Ile Cys Gln Ala Tyr Glu Pro Gly Asp Leu Ser Asn Leu Arg Glu Thr
 545 550 555 560
 Asp Ile

<210> 15
 <211> 499
 <212> PRT
 <213> Homo sapiens

<400> 15
 Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln
 1 5 10 15
 Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
 20 25 30
 Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile
 35 40 45
 Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr
 50 55 60
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu
 65 70 75 80
 Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg
 85 90 95
 Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala
 100 105 110
 Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val
 115 120 125
 Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu
 130 135 140
 Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly
 145 150 155 160
 Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys

165										170					175				
Gln	Ile	Asn	Glu	Glu	Pro	Gly	Tyr	Val	Leu	Phe	Ser	Ala	Leu	Gly	Ser				
			180					185					190						
Phe	Tyr	Leu	Pro	Leu	Ala	Ile	Ile	Leu	Val	Met	Tyr	Cys	Arg	Val	Tyr				
		195					200					205							
Val	Val	Ala	Lys	Arg	Glu	Ser	Arg	Gly	Leu	Lys	Ser	Gly	Leu	Lys	Thr				
	210					215					220								
Asp	Lys	Ser	Asp	Ser	Glu	Gln	Val	Thr	Leu	Arg	Ile	His	Arg	Lys	Asn				
225					230					235					240				
Ala	Pro	Ala	Gly	Gly	Ser	Gly	Met	Ala	Ser	Ala	Lys	Thr	Lys	Thr	His				
			245					250						255					
Phe	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys				
			260					265					270						
Thr	Leu	Gly	Ile	Val	Val	Gly	Cys	Phe	Val	Leu	Cys	Trp	Leu	Pro	Phe				
	275						280					285							
Phe	Leu	Val	Met	Pro	Ile	Gly	Ser	Phe	Phe	Pro	Asp	Phe	Lys	Pro	Ser				
	290					295					300								
Glu	Thr	Val	Phe	Lys	Ile	Val	Phe	Trp	Leu	Gly	Tyr	Leu	Asn	Ser	Cys				
305					310					315					320				
Ile	Asn	Pro	Ile	Ile	Tyr	Pro	Cys	Ser	Ser	Gln	Glu	Phe	Lys	Lys	Ala				
			325					330						335					
Phe	Gln	Asn	Val	Leu	Arg	Ile	Gln	Cys	Leu	Arg	Arg	Lys	Gln	Ser	Ser				
			340					345					350						
Lys	His	Ala	Leu	Gly	Tyr	Thr	Leu	His	Pro	Pro	Ser	Gln	Ala	Val	Glu				
		355					360					365							
Gly	Gln	His	Lys	Asp	Met	Val	Arg	Ile	Pro	Val	Gly	Ser	Arg	Glu	Thr				
	370					375					380								
Phe	Tyr	Arg	Ile	Ser	Lys	Thr	Asp	Gly	Val	Cys	Glu	Trp	Lys	Phe	Phe				
385					390					395					400				
Ser	Ser	Met	Pro	Arg	Gly	Ser	Ala	Arg	Ile	Thr	Val	Ser	Lys	Asp	Gln				
			405					410						415					
Ser	Ser	Cys	Thr	Thr	Ala	Arg	Thr	Lys	Ser	Arg	Ser	Val	Thr	Arg	Leu				
			420					425					430						
Glu	Cys	Ser	Gly	Met	Ile	Leu	Ala	His	Cys	Asn	Leu	Arg	Leu	Pro	Gly				
	435						440					445							
Ser	Arg	Asp	Ser	Pro	Ala	Ser	Ala	Ser	Gln	Ala	Ala	Gly	Thr	Thr	Gly				
	450					455					460								
Asp	Val	Pro	Pro	Gly	Arg	Arg	His	Gln	Ala	Gln	Leu	Ile	Phe	Val	Phe				
465					470					475					480				

Leu Val Glu Thr Gly Phe His His Val Gly Gln Asp Asp Leu Asp Leu
 485 490 495

Leu Thr Ser

<210> 16

<211> 429

<212> PRT

<213> Homo sapiens

<400> 16

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln
 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
 20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu
 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly
 145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys
 165 170 175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser
 180 185 190

Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr
 195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr
 210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn
 225 230 235 240

Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His

				245						250						255			
Phe	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys				
			260					265					270						
Thr	Leu	Gly	Ile	Val	Val	Gly	Cys	Phe	Val	Leu	Cys	Trp	Leu	Pro	Phe				
		275					280					285							
Phe	Leu	Val	Met	Pro	Ile	Gly	Ser	Phe	Phe	Pro	Asp	Phe	Lys	Pro	Ser				
	290					295					300								
Glu	Thr	Val	Phe	Lys	Ile	Val	Phe	Trp	Leu	Gly	Tyr	Leu	Asn	Ser	Cys				
305					310					315					320				
Ile	Asn	Pro	Ile	Ile	Tyr	Pro	Cys	Ser	Ser	Gln	Glu	Phe	Lys	Lys	Ala				
			325					330						335					
Phe	Gln	Asn	Val	Leu	Arg	Ile	Gln	Cys	Leu	Arg	Arg	Lys	Gln	Ser	Ser				
			340					345					350						
Lys	His	Ala	Leu	Gly	Tyr	Thr	Leu	His	Pro	Pro	Ser	Gln	Ala	Val	Glu				
		355					360					365							
Gly	Gln	His	Lys	Asp	Met	Val	Arg	Ile	Pro	Val	Gly	Ser	Arg	Glu	Thr				
	370					375					380								
Phe	Tyr	Arg	Ile	Ser	Lys	Thr	Asp	Gly	Val	Cys	Glu	Trp	Lys	Phe	Phe				
385					390					395					400				
Ser	Ser	Met	Pro	Arg	Gly	Ser	Ala	Arg	Ile	Thr	Val	Ser	Lys	Asp	Gln				
			405					410						415					
Ser	Ser	Cys	Thr	Thr	Ala	Arg	Gly	His	Thr	Pro	Met	Thr							
			420					425											

<210> 17

<211> 455

<212> PRT

<213> Homo sapiens

<400> 17

Met	Val	Phe	Leu	Ser	Gly	Asn	Ala	Ser	Asp	Ser	Ser	Asn	Cys	Thr	Gln				
1				5					10					15					
Pro	Pro	Ala	Pro	Val	Asn	Ile	Ser	Lys	Ala	Ile	Leu	Leu	Gly	Val	Ile				
			20					25					30						
Leu	Gly	Gly	Leu	Ile	Leu	Phe	Gly	Val	Leu	Gly	Asn	Ile	Leu	Val	Ile				
		35					40					45							
Leu	Ser	Val	Ala	Cys	His	Arg	His	Leu	His	Ser	Val	Thr	His	Tyr	Tyr				
	50					55					60								
Ile	Val	Asn	Leu	Ala	Val	Ala	Asp	Leu	Leu	Leu	Thr	Ser	Thr	Val	Leu				
65					70					75					80				
Pro	Phe	Ser	Ala	Ile	Phe	Glu	Val	Leu	Gly	Tyr	Trp	Ala	Phe	Gly	Arg				
				85					90					95					

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala
 100 105 110
 Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val
 115 120 125
 Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu
 130 135 140
 Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly
 145 150 155 160
 Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys
 165 170 175
 Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser
 180 185 190
 Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr
 195 200 205
 Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr
 210 215 220
 Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn
 225 230 235 240
 Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His
 245 250 255
 Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys
 260 265 270
 Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe
 275 280 285
 Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser
 290 295 300
 Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys
 305 310 315 320
 Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala
 325 330 335
 Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Cys Arg Lys Gln Ser Ser
 340 345 350
 Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu
 355 360 365
 Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr
 370 375 380
 Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe
 385 390 395 400
 Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln

```
<210> 18
<211> 466
<212> PRT
<213> Rattus norvegicus
```

23

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn
 225 230 235 240
 Val Pro Ala Glu Gly Gly Gly Val Ser Ser Ala Lys Asn Lys Thr His
 245 250 255
 Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys
 260 265 270
 Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe
 275 280 285
 Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser
 290 295 300
 Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys
 305 310 315 320
 Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala
 325 330 335
 Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Arg Gln Ser Ser
 340 345 350
 Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Leu Glu
 355 360 365
 Gly Gln His Arg Asp Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr
 370 375 380
 Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe
 385 390 395 400
 Ser Ser Met Pro Gln Gly Ser Ala Arg Ile Thr Val Pro Lys Asp Gln
 405 410 415
 Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val
 420 425 430
 Cys Cys Cys Val Gly Ser Ser Ala Pro Arg Pro Glu Glu Asn His Gln
 435 440 445
 Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Gly Glu Asn Gly Glu
 450 455 460
 Glu Val
 465

<210> 19
 <211> 466
 <212> PRT
 <213> Mus musculus

<400> 19
 Met Val Leu Leu Ser Glu Asn Ala Ser Glu Gly Ser Asn Cys Thr His
 1 5 10 15

Pro Pro Ala Gln Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
 20 25 30
 Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile
 35 40 45
 Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr
 50 55 60
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu
 65 70 75 80
 Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg
 85 90 95
 Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala
 100 105 110
 Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val
 115 120 125
 Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Val
 130 135 140
 Arg Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly
 145 150 155 160
 Pro Leu Phe Gly Trp Arg Gln Gln Ala Pro Glu Asp Glu Thr Ile Cys
 165 170 175
 Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser
 180 185 190
 Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr
 195 200 205
 Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr
 210 215 220
 Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn
 225 230 235 240
 Val Pro Ala Glu Gly Ser Gly Val Ser Ser Ala Lys Asn Lys Thr His
 245 250 255
 Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys
 260 265 270
 Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe
 275 280 285
 Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asn Phe Lys Pro Pro
 290 295 300
 Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys
 305 310 315 320
 Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala
 325 330 335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Arg Gln Ser Ser
340 345 350

Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu
355 360 365

Glu Gln His Arg Gly Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr
370 375 380

Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe
385 390 395 400

Ser Ser Met Pro Gln Gly Ser Ala Arg Ile Thr Met Pro Lys Asp Gln
405 410 415

Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val
420 425 430

Cys Cys Cys Val Gly Ser Ser Thr Pro Arg Pro Glu Glu Asn His Gln
435 440 445

Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Gly Glu Asn Gly Glu
450 455 460

Glu Val
465

<210> 20

<211> 466

<212> PRT

<213> Bos taurus

<400> 20

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His
1 5 10 15

Pro Pro Pro Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile
35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr
50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu
65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg
85 90 95

Val Phe Cys Asn Val Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala
100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val
115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Lys Arg Gly Leu
 130 135 140
 Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly
 145 150 155 160
 Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys
 165 170 175
 Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser
 180 185 190
 Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr
 195 200 205
 Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr
 210 215 220
 Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn
 225 230 235 240
 Ala Gln Val Gly Gly Ser Gly Val Thr Ser Ala Lys Asn Lys Thr His
 245 250 255
 Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys
 260 265 270
 Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe
 275 280 285
 Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Arg Pro Ser
 290 295 300
 Glu Thr Val Phe Lys Ile Ala Phe Trp Leu Gly Tyr Leu Asn Ser Cys
 305 310 315 320
 Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala
 325 330 335
 Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser
 340 345 350
 Lys His Thr Leu Gly Tyr Thr Leu His Ala Pro Ser His Val Leu Glu
 355 360 365
 Gly Gln His Lys Asp Leu Val Arg Ile Pro Val Gly Ser Ala Glu Thr
 370 375 380
 Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Ile Phe
 385 390 395 400
 Ser Ser Leu Pro Arg Gly Ser Ala Arg Met Ala Val Ala Arg Asp Pro
 405 410 415
 Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val
 420 425 430
 Cys Cys Cys Leu Gly Pro Ser Thr Pro Ser His Gly Glu Asn His Gln
 435 440 445

Ile Pro Thr Ile Lys Ile His Thr Ile Ser Leu Ser Glu Asn Gly Glu
 450 455 460

Glu Val
 465

<210> 21

<211> 295

<212> PRT

<213> Canis familiaris

<400> 21

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His
 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
 20 25 30

Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Lys Arg Gly Leu
 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly
 145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys
 165 170 175

Gln Ile Thr Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser
 180 185 190

Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr
 195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr
 210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn
 225 230 235 240

```
<210> 22
<211> 466
<212> PRT
<213> Oryctolagus cuniculus
```

29

210					215					220					
Asp	Lys	Ser	Asp	Ser	Glu	Gln	Val	Thr	Leu	Arg	Ile	His	Arg	Lys	Asn
225					230					235					240
Ala	Pro	Ala	Gly	Gly	Ser	Gly	Val	Ala	Ser	Ala	Lys	Asn	Lys	Thr	His
			245						250					255	
Phe	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys
			260					265					270		
Thr	Leu	Gly	Ile	Val	Val	Gly	Cys	Phe	Val	Leu	Cys	Trp	Leu	Pro	Phe
		275					280					285			
Phe	Leu	Val	Met	Pro	Ile	Gly	Ser	Phe	Phe	Pro	Asp	Phe	Lys	Pro	Pro
	290					295					300				
Glu	Thr	Val	Phe	Lys	Ile	Val	Phe	Trp	Leu	Gly	Tyr	Leu	Asn	Ser	Cys
305					310					315					320
Ile	Asn	Pro	Ile	Ile	Tyr	Pro	Cys	Ser	Ser	Gln	Glu	Phe	Lys	Lys	Ala
			325						330					335	
Phe	Gln	Asn	Val	Leu	Lys	Ile	Gln	Cys	Leu	Arg	Arg	Lys	Gln	Ser	Ser
			340					345					350		
Lys	His	Ala	Leu	Gly	Tyr	Thr	Leu	His	Ala	Pro	Ser	Gln	Ala	Leu	Glu
		355					360					365			
Gly	Gln	His	Lys	Asp	Met	Val	Arg	Ile	Pro	Val	Gly	Ser	Gly	Glu	Thr
	370					375					380				
Phe	Tyr	Lys	Ile	Ser	Lys	Thr	Asp	Gly	Val	Cys	Glu	Trp	Lys	Phe	Phe
385					390					395					400
Ser	Ser	Met	Pro	Arg	Gly	Ser	Ala	Arg	Ile	Thr	Val	Pro	Lys	Asp	Gln
			405						410					415	
Ser	Ala	Cys	Thr	Thr	Ala	Arg	Val	Arg	Ser	Lys	Ser	Phe	Leu	Gln	Val
			420					425					430		
Cys	Cys	Cys	Val	Gly	Pro	Ser	Thr	Pro	Asn	Pro	Gly	Glu	Asn	His	Gln
		435					440					445			
Val	Pro	Thr	Ile	Lys	Ile	His	Thr	Ile	Ser	Leu	Ser	Glu	Asn	Gly	Glu
	450					455					460				
Glu	Val														
465															

<210> 23

<211> 466

<212> PRT

<213> Homo sapiens

<400> 23

Met	Val	Phe	Leu	Ser	Gly	Asn	Ala	Ser	Asp	Ser	Ser	Asn	Cys	Thr	Gln
1				5					10				15		

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
 20 25 30
 Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile
 35 40 45
 Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr
 50 55 60
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu
 65 70 75 80
 Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg
 85 90 95
 Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala
 100 105 110
 Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val
 115 120 125
 Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu
 130 135 140
 Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly
 145 150 155 160
 Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys
 165 170 175
 Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser
 180 185 190
 Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr
 195 200 205
 Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr
 210 215 220
 Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn
 225 230 235 240
 Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His
 245 250 255
 Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys
 260 265 270
 Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe
 275 280 285
 Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser
 290 295 300
 Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys
 305 310 315 320
 Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala

325 330 335
 Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Cys Arg Lys Gln Ser Ser
 340 345 350
 Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu
 355 360 365
 Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr
 370 375 380
 Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe
 385 390 395 400
 Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln
 405 410 415
 Ser Ser Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val
 420 425 430
 Cys Cys Cys Val Gly Pro Ser Thr Pro Ser Leu Asp Lys Asn His Gln
 435 440 445
 Val Pro Thr Ile Lys Val His Thr Ile Ser Leu Ser Glu Asn Gly Glu
 450 455 460
 Glu Val
 465

<210> 24
 <211> 470
 <212> PRT
 <213> Oryzias latipes

<400> 24
 Met Thr Pro Ser Ser Val Thr Leu Asn Cys Ser Asn Cys Ser His Val
 1 5 10 15
 Leu Ala Pro Glu Leu Asn Thr Val Lys Ala Val Val Leu Gly Met Val
 20 25 30
 Leu Gly Ile Phe Ile Leu Phe Gly Val Ile Gly Asn Ile Leu Val Ile
 35 40 45
 Leu Ser Val Val Cys His Arg His Leu Gln Thr Val Thr Tyr Tyr Phe
 50 55 60
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Ser Ser Thr Val Leu
 65 70 75 80
 Pro Phe Ser Ala Ile Phe Glu Ile Leu Asp Arg Trp Val Phe Gly Arg
 85 90 95
 Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala
 100 105 110
 Ser Ile Met Ser Leu Cys Val Ile Ser Val Asp Arg Tyr Ile Gly Val
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Ala Ile Met Thr Lys Arg Arg Ala Leu
 130 135 140
 Leu Ala Val Met Leu Leu Trp Val Leu Ser Val Ile Ile Ser Ile Gly
 145 150 155 160
 Pro Leu Phe Gly Trp Lys Glu Pro Ala Pro Glu Asp Glu Thr Val Cys
 165 170 175
 Lys Ile Thr Glu Glu Pro Gly Tyr Ala Ile Phe Ser Ala Val Gly Ser
 180 185 190
 Phe Tyr Leu Pro Leu Ala Ile Ile Leu Ala Met Tyr Cys Arg Val Tyr
 195 200 205
 Val Val Ala Gln Lys Glu Ser Arg Gly Leu Lys Glu Gly Gln Lys Ile
 210 215 220
 Glu Lys Ser Asp Ser Glu Gln Val Ile Leu Arg Met His Arg Gly Asn
 225 230 235 240
 Thr Thr Val Ser Glu Asp Glu Ala Leu Arg Ser Arg Thr His Phe Ala
 245 250 255
 Leu Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu
 260 265 270
 Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe Phe Leu
 275 280 285
 Val Leu Pro Ile Gly Ser Ile Phe Pro Ala Tyr Arg Pro Ser Asp Thr
 290 295 300
 Val Phe Lys Ile Thr Phe Trp Leu Gly Tyr Phe Asn Ser Cys Ile Asn
 305 310 315 320
 Pro Ile Ile Tyr Leu Cys Ser Asn Gln Glu Phe Lys Lys Ala Phe Gln
 325 330 335
 Ser Leu Leu Gly Val His Cys Leu Arg Met Thr Pro Arg Ala His His
 340 345 350
 His His Leu Ser Val Gly Gln Ser Gln Thr Gln Gly His Ser Leu Thr
 355 360 365
 Ile Ser Leu Asp Ser Lys Gly Ala Pro Cys Arg Leu Ser Pro Ser Ser
 370 375 380
 Ser Val Ala Leu Ser Arg Thr Pro Ser Ser Arg Asp Ser Arg Glu Trp
 385 390 395 400
 Arg Val Phe Ser Gly Gly Pro Ile Asn Ser Gly Pro Gly Pro Thr Glu
 405 410 415
 Ala Gly Arg Ala Lys Val Ala Lys Leu Cys Asn Lys Ser Leu His Arg
 420 425 430
 Thr Cys Cys Cys Ile Leu Arg Ala Arg Thr Pro Thr Gln Asp Pro Ala

435 440 445
 Pro Leu Gly Asp Leu Pro Thr Ile Lys Ile His Gln Leu Ser Leu Ser
 450 455 460

 Glu Lys Gly Glu Ser Val
 465 470

 <210> 25
 <211> 391
 <212> PRT
 <213> Branchiostoma lanceolatum

 <400> 25
 Met Ser Ala Asn Thr Thr Val Ser Pro Thr Glu Thr Thr Ala Asn Leu
 1 5 10 15

 Thr Ala Asn Ser Thr Glu Ala Ser Val Gly Ser Cys Phe Ala Pro Asn
 20 25 30

 Pro Tyr Ser Ala Gly Val Gln Ala Val Leu Gly Leu Ile Thr Val Ile
 35 40 45

 Leu Ile Leu Leu Thr Val Ile Gly Asn Val Leu Val Ile Leu Ala Val
 50 55 60

 Thr Cys His Arg Lys Met Arg Thr Val Thr Asn Phe Phe Ile Val Ser
 65 70 75 80

 Leu Ala Cys Ala Asp Leu Ser Val Gly Ile Thr Val Leu Pro Phe Ala
 85 90 95

 Ala Thr Asn Asp Ile Leu Gly Tyr Trp Pro Phe Gly Gly Tyr Cys Asp
 100 105 110

 Val Trp Val Ser Phe Asp Val Leu Asn Ser Thr Ala Ser Ile Leu Asn
 115 120 125

 Leu Val Val Ile Ala Phe Asp Arg Phe Leu Ala Ile Thr Ala Pro Phe
 130 135 140

 Thr Tyr His Thr Arg Met Thr Glu Arg Thr Ala Gly Ile Leu Ile Ala
 145 150 155 160

 Thr Val Trp Gly Ile Ser Leu Val Val Ser Phe Leu Pro Ile Gln Ala
 165 170 175

 Gly Trp Tyr Arg Asp Asn Gln Ser Glu Glu Ala Leu Ala Ile Tyr Ser
 180 185 190

 Asp Pro Cys Leu Cys Ile Phe Thr Ala Ser Thr Ala Tyr Thr Ile Val
 195 200 205

 Ser Ser Leu Ile Ser Phe Tyr Ile Pro Leu Leu Ile Met Leu Val Phe
 210 215 220

 Tyr Gly Ile Ile Phe Lys Ala Ala Arg Asp Gln Ala Arg Lys Ile Asn
 225 230 235 240

<223> Description of Artificial Sequence: Synthesized

peptide

<400> 27

Gln Arg Lys Pro Gln Leu Leu Gln Val Thr Asn Arg Phe
 1 5 10

<210> 28

<211> 5

<212> PRT

<213> Artificial Sequence

<220> .

<223> Description of Artificial Sequence: Synthesized
 peptide

<400> 28

Trp Pro Leu Asn Ser
 1 5

<210> 29

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthesized
 peptide

<400> 29

Asp Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met
 1 5 10 15

Thr Gln Arg Arg
 20

<210> 30

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthesized
 peptide

<400> 30

Gly Gln Ala Ala Phe Asp Glu Arg Asn Ala Leu Cys Ser Met Ile Trp
 1 5 10 15

Gly Ala Ser Pro Ser Tyr Thr
 20

<210> 31

<211> 182

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthesized peptide

<400> 31

Cys Ala Ala Arg Arg Gln His Ala Leu Leu Tyr Asn Val Lys Arg His
 1 5 10 15

Ser Leu Glu Val Arg Val Lys Asp Cys Val Glu Asn Glu Asp Glu Glu
 20 25 30

Gly Ala Glu Lys Lys Glu Glu Phe Gln Asp Glu Ser Glu Phe Arg Arg
 35 40 45

Gln His Glu Gly Glu Val Lys Ala Lys Glu Gly Arg Met Glu Ala Lys
 50 55 60

Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser Thr Gly Thr Ser Glu Ser
 65 70 75 80

Ser Val Glu Ala Gly Ser Glu Glu Val Arg Glu Ser Ser Thr Val Ala
 85 90 95

Ser Asp Gly Ser Met Glu Gly Lys Glu Gly Ser Thr Lys Val Glu Glu
 100 105 110

Asn Ser Met Lys Ala Asp Lys Gly Arg Thr Glu Val Asn Gln Cys Ser
 115 120 125

Ile Asp Leu Gly Glu Asp Asp Met Glu Phe Gly Glu Asp Asp Ile Asn
 130 135 140

Phe Ser Glu Asp Asp Val Glu Ala Val Asn Ile Pro Glu Ser Leu Pro
 145 150 155 160

Pro Ser Arg Arg Asn Ser Asn Ser Asn Pro Pro Leu Pro Arg Cys Tyr
 165 170 175

Gln Cys Lys Ala Ala Lys
 180

<210> 32

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthesized peptide

<400> 32

Ala Val Leu Ala Val Trp Val Asp Val Glu Thr Gln Val Pro Gln
 1 5 10 15

<210> 33

<211> 55

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthesized peptide

<400> 33
 Tyr Gly Tyr Met His Lys Thr Ile Lys Lys Glu Ile Gln Asp Met Leu
 1 5 10 15
 Lys Lys Phe Phe Cys Lys Glu Lys Pro Pro Lys Glu Asp Ser His Pro
 20 25 30
 Asp Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly Lys Ile Val Pro Ser
 35 40 45
 Tyr Asp Ser Ala Thr Phe Pro
 50 55

<210> 34
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: HGPRBMY8 sense primer

<400> 34
 gcagagcact cctccactct 20

<210> 35
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: HGPRBMY8 anti-sense primer

<400> 35
 agcaggcaat catgacaatc 20

<210> 36
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: GPCR84 sense primer

<400> 36
 gttagcctca cccacctgtt 20

<210> 37
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: GPCR84
 anti-sense primer

<400> 37
 cacaatccag gtgccataga 20

<210> 38
 <211> 42
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: HGPRBMY8 5'
 primer

<400> 38
 gtccccaagc ttgcaccatg acgtccacct gcaccaacag ca 42

<210> 39
 <211> 62
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: HGPRBMY8 3'
 Flag-tag primer

<400> 39
 cgggatccta cttgtcgtcg tcgtccttgt agtccatagg aaaagtagca gaatcgtagg 60
 aa 62

<210> 40
 <211> 407
 <212> PRT
 <213> Homo sapiens

<400> 40
 Met Ser Leu Asn Ser Ser Leu Ser Cys Arg Lys Glu Leu Ser Asn Leu
 1 5 10 15
 Thr Glu Glu Glu Gly Gly Glu Gly Gly Val Ile Ile Thr Gln Phe Ile
 20 25 30
 Ala Ile Ile Val Ile Thr Ile Phe Val Cys Leu Gly Asn Leu Val Ile
 35 40 45
 Val Val Thr Leu Tyr Lys Lys Ser Tyr Leu Leu Thr Leu Ser Asn Lys
 50 55 60

Phe	Val	Phe	Ser	Leu	Thr	Leu	Ser	Asn	Phe	Leu	Leu	Ser	Val	Leu	Val	65	70	75	80
Leu	Pro	Phe	Val	Val	Thr	Ser	Ser	Ile	Arg	Arg	Glu	Trp	Ile	Phe	Gly	85	90		95
Val	Val	Trp	Cys	Asn	Phe	Ser	Ala	Leu	Leu	Tyr	Leu	Leu	Ile	Ser	Ser	100	105		110
Ala	Ser	Met	Leu	Thr	Leu	Gly	Val	Ile	Ala	Ile	Asp	Arg	Tyr	Tyr	Ala	115	120		125
Val	Leu	Tyr	Pro	Met	Val	Tyr	Pro	Met	Lys	Ile	Thr	Gly	Asn	Arg	Ala	130	135		140
Val	Met	Ala	Leu	Val	Tyr	Ile	Trp	Leu	His	Ser	Leu	Ile	Gly	Cys	Leu	145	150	155	160
Pro	Pro	Leu	Phe	Gly	Trp	Ser	Ser	Val	Glu	Phe	Asp	Glu	Phe	Lys	Trp	165	170		175
Met	Cys	Val	Ala	Ala	Trp	His	Arg	Glu	Pro	Gly	Tyr	Thr	Ala	Phe	Trp	180	185		190
Gln	Ile	Trp	Cys	Ala	Leu	Phe	Pro	Phe	Leu	Val	Met	Leu	Val	Cys	Tyr	195	200		205
Gly	Phe	Ile	Phe	Arg	Val	Ala	Arg	Val	Lys	Ala	Arg	Lys	Val	His	Cys	210	215		220
Gly	Thr	Val	Val	Ile	Val	Glu	Glu	Asp	Ala	Gln	Arg	Thr	Gly	Arg	Lys	225	230	235	240
Asn	Ser	Ser	Thr	Ser	Thr	Ser	Ser	Ser	Gly	Ser	Arg	Arg	Asn	Ala	Phe	245	250		255
Gln	Gly	Val	Val	Tyr	Ser	Ala	Asn	Gln	Cys	Lys	Ala	Leu	Ile	Thr	Ile	260	265		270
Leu	Val	Val	Leu	Gly	Ala	Phe	Met	Val	Thr	Trp	Gly	Pro	Tyr	Met	Val	275	280		285
Val	Ile	Ala	Ser	Glu	Ala	Leu	Trp	Gly	Lys	Ser	Ser	Val	Ser	Pro	Ser	290	295		300
Leu	Glu	Thr	Trp	Ala	Thr	Trp	Leu	Ser	Phe	Ala	Ser	Ala	Val	Cys	His	305	310	315	320
Pro	Leu	Ile	Tyr	Gly	Leu	Trp	Asn	Lys	Thr	Val	Arg	Lys	Glu	Leu	Leu	325	330		335
Gly	Met	Cys	Phe	Gly	Asp	Arg	Tyr	Tyr	Arg	Glu	Pro	Phe	Val	Gln	Arg	340	345		350
Gln	Arg	Thr	Ser	Arg	Leu	Phe	Ser	Ile	Ser	Asn	Arg	Ile	Thr	Asp	Leu	355	360		365
Gly	Leu	Ser	Pro	His	Leu	Thr	Ala	Leu	Met	Ala	Gly	Gly	Gln	Pro	Leu	370	375		380

Gly His Ser Ser Ser Thr Gly Asp Thr Gly Phe Ser Cys Ser Gln Asp
 385 390 395 400

Ser Gly Asn Leu Arg Ala Leu
 405

<210> 41

<211> 448

<212> PRT

<213> Homo sapiens

<400> 41

Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His
 1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile
 20 25 30

Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly
 35 40 45

Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln
 50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln
 65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe
 85 90 95

Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His
 100 105 110

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Val Val Ser Val Asp
 115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr
 130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile
 145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp
 165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr
 180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met
 195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala
 210 215 220

Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp
 225 230 235 240

```
<210> 42
<211> 448
<212> PRT
<213> Homo sapiens
```

42

50					55					60					
Val	Thr	Asn	Arg	Phe	Ile	Phe	Asn	Leu	Leu	Val	Thr	Asp	Leu	Leu	Gln
65					70					75					80
Ile	Ser	Leu	Val	Ala	Pro	Trp	Val	Val	Ala	Thr	Ser	Val	Pro	Leu	Phe
				85					90					95	
Trp	Pro	Leu	Asn	Ser	His	Phe	Cys	Thr	Ala	Leu	Val	Ser	Leu	Thr	His
			100					105					110		
Leu	Phe	Ala	Phe	Ala	Ser	Val	Asn	Thr	Ile	Val	Val	Val	Ser	Val	Asp
		115					120					125			
Arg	Tyr	Leu	Ser	Ile	Ile	His	Pro	Leu	Ser	Tyr	Pro	Ser	Lys	Met	Thr
	130					135					140				
Gln	Arg	Arg	Gly	Tyr	Leu	Leu	Leu	Tyr	Gly	Thr	Trp	Ile	Val	Ala	Ile
145					150					155					160
Leu	Gln	Ser	Thr	Pro	Pro	Leu	Tyr	Gly	Trp	Gly	Gln	Ala	Ala	Phe	Asp
				165					170					175	
Glu	Arg	Asn	Ala	Leu	Cys	Ser	Met	Ile	Trp	Gly	Ala	Ser	Pro	Ser	Tyr
			180					185					190		
Thr	Ile	Leu	Ser	Val	Val	Ser	Phe	Ile	Val	Ile	Pro	Leu	Ile	Val	Met
		195					200					205			
Ile	Ala	Cys	Tyr	Ser	Val	Val	Phe	Cys	Ala	Ala	Arg	Arg	Gln	His	Ala
	210					215					220				
Leu	Leu	Tyr	Asn	Val	Lys	Arg	His	Ser	Leu	Glu	Val	Arg	Val	Lys	Asp
225					230					235					240
Cys	Val	Glu	Asn	Glu	Asp	Glu	Glu	Gly	Ala	Glu	Lys	Lys	Glu	Glu	Phe
				245					250					255	
Gln	Asp	Glu	Ser	Glu	Phe	Arg	Arg	Gln	His	Glu	Gly	Glu	Val	Lys	Ala
			260					265					270		
Lys	Glu	Gly	Arg	Met	Glu	Ala	Lys	Asp	Gly	Ser	Leu	Lys	Ala	Lys	Glu
		275					280					285			
Gly	Ser	Thr	Gly	Thr	Ser	Glu	Ser	Ser	Val	Glu	Ala	Arg	Gly	Ser	Glu
		290				295					300				
Glu	Val	Arg	Glu	Ser	Ser	Thr	Val	Ala	Ser	Asp	Gly	Ser	Met	Glu	Gly
305					310					315				320	
Lys	Glu	Gly	Ser	Thr	Lys	Val	Glu	Glu	Asn	Ser	Met	Lys	Ala	Asp	Lys
				325					330					335	
Gly	Arg	Thr	Glu	Val	Asn	Gln	Cys	Ser	Ile	Asp	Leu	Gly	Glu	Asp	Asp
			340					345					350		
Met	Glu	Phe	Gly	Glu	Asp	Asp	Ile	Asn	Phe	Ser	Glu	Asp	Asp	Val	Glu
		355					360					365			

Ala Val Asn Ile Pro Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn
 370 375 380

Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Lys Lys Val
 385 390 395 400

Ile Phe Ile Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys
 405 410 415

Phe Leu Ala Val Glu Asp Ser His Pro Asp Leu Pro Gly Thr Glu Gly
 420 425 430

Gly Thr Glu Gly Lys Ile Val Pro Ser Tyr Asp Ser Ala Thr Phe Pro
 435 440 445

<210> 43
 <211> 448
 <212> PRT
 <213> Homo sapiens

<400> 43
 Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His
 1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile
 20 25 30

Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly
 35 40 45

Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln
 50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln
 65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe
 85 90 95

Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His
 100 105 110

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Leu Val Ser Val Asp
 115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr
 130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile
 145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp
 165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr

180						185						190					
Thr	Ile	Leu	Ser	Val	Val	Ser	Phe	Ile	Val	Ile	Pro	Leu	Ile	Val	Met		
		195					200						205				
Ile	Ala	Cys	Tyr	Ser	Val	Val	Phe	Cys	Ala	Ala	Arg	Arg	Gln	His	Ala		
	210						215				220						
Leu	Leu	Tyr	Asn	Val	Lys	Arg	His	Ser	Leu	Glu	Val	Arg	Val	Lys	Asp		
	225				230					235					240		
Cys	Val	Glu	Asn	Glu	Asp	Glu	Glu	Gly	Ala	Glu	Lys	Lys	Glu	Glu	Phe		
				245					250					255			
Gln	Asp	Glu	Ser	Glu	Phe	Arg	Arg	Gln	His	Glu	Gly	Glu	Val	Lys	Ala		
			260					265					270				
Lys	Glu	Gly	Arg	Met	Glu	Ala	Lys	Asp	Gly	Ser	Leu	Lys	Ala	Lys	Glu		
		275					280						285				
Gly	Ser	Thr	Gly	Thr	Ser	Glu	Ser	Ser	Val	Glu	Ala	Arg	Gly	Ser	Glu		
		290					295				300						
Glu	Val	Arg	Glu	Ser	Ser	Thr	Val	Ala	Ser	Asp	Gly	Ser	Met	Glu	Gly		
	305				310					315					320		
Lys	Glu	Gly	Ser	Thr	Lys	Val	Glu	Glu	Asn	Ser	Met	Lys	Ala	Asp	Lys		
				325					330					335			
Gly	Arg	Thr	Glu	Val	Asn	Gln	Cys	Ser	Ile	Asp	Leu	Gly	Glu	Asp	Gly		
			340					345					350				
Met	Glu	Phe	Gly	Glu	Asp	Asp	Ile	Asn	Phe	Ser	Glu	Asp	Asp	Val	Glu		
		355					360						365				
Ala	Val	Asn	Ile	Pro	Glu	Ser	Leu	Pro	Pro	Ser	Arg	Arg	Asn	Ser	Asn		
		370					375				380						
Ser	Asn	Pro	Pro	Leu	Pro	Arg	Cys	Tyr	Gln	Cys	Lys	Ala	Ala	Lys	Val		
					390					395					400		
Ile	Phe	Ile	Ile	Ile	Phe	Ser	Tyr	Val	Leu	Ser	Leu	Gly	Pro	Tyr	Cys		
				405					410					415			
Phe	Leu	Ala	Val	Glu	Asp	Ser	His	Pro	Asp	Leu	Pro	Gly	Thr	Glu	Gly		
			420					425					430				
Gly	Thr	Glu	Gly	Lys	Ile	Val	Pro	Ser	Tyr	Asp	Ser	Ala	Thr	Phe	Pro		
		435					440						445				

<210> 44

<211> 1659

<212> DNA

<213> Homo sapiens

<400> 44

```

gectgcaacc tgtcycacgc cctctggctg ttgccatgac gtccacctgc accaacagca 60
cgcgcgagag taacagcagc cacacgtgca tgccctctc caaaatgcc atcagcctgg 120
cccacggcat catccgctca accgtgctgg ttatcttctt cgccgcctct ttcgtcggca 180
acatagtgtt ggcgctagtg ttgcagcgca agcgcagct gctgcagggt accaaccgtt 240
ttatctttta cctcctcgtc accgacctgc tgcagatttc gctcgtggcc ccctgggtgg 300
tggccacctc tgtgcctctc ttctggcccc tcaacagcca cttctgcacg gccctggtta 360
gcctcaccca cctgttcgcc ttccgccagc tcaacaccat tgtcttgggt tcagtggatc 420
gctacttgtc catcatccac cctctctcct acccgctcaa gatgacctag cgccgcgggt 480
acctgctcct ctatggcacc tggattgtgg ccactcctgc gagcactcct ccactctacg 540
gctggggcca ggctgccttt gatgagcgca atgctctctg ctccatgatc tggggggcca 600
gccccagcta cactattctc agcgtgggtg ccttcactgt cattccactg attgtcatga 660
ttgcttgcta ctccgtgggt ttctgtgcag cccggaggca gcatgctctg ctgtacaatg 720
tcaagagaca cagcttggaa gtgcgagtca aggactgtgt ggagaatgag gatgaagagg 780
gagcagagaa gaaggaggag ttccaggatg agagtgagtt tcgccgccag catgaagggt 840
aggtcaaggc caaggagggc agaattggaag ccaaggacgg cagcctgaag gccaaaggaag 900
gaagcacggg gaccagttag agtagttag agggcagggg cagcgaggag gtcagagaga 960
gcagcacggg ggccagcgac ggcagcatgg agggtaagga aggcagcacc aaagttgagg
1020
agaacagcat gaaggcagac aagggtcgca cagagggtcaa ccagtgcagc attgacttgg
1080
gtgaagatgg catggagttt ggtgaagacg acatcaattt cagtgaggat gacgtcgagg
1140
cagtgaacat cccggagagc ctcccaccca gtcgtcgtaa cagcaacagc aacctctctc
1200
tgcccagggtg ctaccagtgc aaagctgcta aagtgatctt catcatcatt ttctcctatg
1260
tgctatccct ggggccctac tgcttttttag cagtccctggc cgtgtgggtg gatgtcgaaa
1320
cccaggtagc ccagtgggtg atcaccataa tcactctggct tttcttctctg cagtgtctgca
1380
tccaccccta tgtctatggc tacatgcaca agaccattaa gaaggaaatc caggacatgc
1440
tgaagaagtt cttctgcaag gaaaagcccc cgaaagaaga tagccacca gacctgcccc
1500
gaacagaggg tgggactgaa ggcaagattg tcccttctta cgattctgct acttttctct
1560
gaagttagtt ctaaggcaaa ccttgaaaat cagtcccttca gccacagcta ttagagctt
1620
taaaactacc aggttcaatc actggttatg ctttctgtg
1659

```

<210> 45

<211> 1527

<212> DNA

<213> Homo sapiens

<400> 45

```

atgacgtcca cctgcaccaa cagcacgcgc gagagtaaca gcagccacac gtgcatgccc 60
ctctccaaaa tgcccatcag cctggccac ggcacatcc gctcaaccgt gctggttatc 120
ttctcgcgcg cctctttcgt cggaacata gtgctggcgc tagtggtgca gcgcaagccg 180
cagctgctgc aggtgaccaa ccgttttctc tttaacctcc tcgtcaccca cctgctgcag 240
atttcgctcg tggccccctg ggtggtggcc acctctgtgc ctctcttctg gccctcaac 300
agccacttct gcacggccct ggttagcctc accacctgt tcgccttcgc cagcgtcaac 360
accattgtcg tgggtgcagt ggatcgctac ttgtccatca tccacctctc ctccatcccg 420
tccaagatga ccacgcgcg cggttacctg ctctctatg gcacctggat tgtggccatc 480
ctgcagagca ctctccact ctacggctgg ggccaggtg cctttgatga gcgcaatgct 540
ctctgctcca tgatctgggg ggccagcccc agctacacta ttctcagcgt ggtgtccttc 600

```

```

atcgtcattc cactgattgt catgattgcc tgctactccg tgggtgttctg tgcagcccgg 660
aggcagcatg ctctgctgta caatgtcaag agacacagct tgggaagtgcg agtcaaggac 720
tgtgtggaga atgaggatga agagggagca gagaagaagg aggagttcca ggatgagagt 780
gagtttcgcc gccagcatga aggtgaggtc aaggccaagg agggcagaat ggaagccaag 840
gacggcagcc tgaaggccaa ggaaggaagc acggggacca gtgagagtag tgtagaggcc 900
aggggcagcg aggaggtcag agagagcagc acggtggcca gcgacggcag catggagggt 960
aaggaaggca gcaccaaagt tgaggagaac agcatgaagg cagacaaggg tcgcacagag
1020
gtcaaccagt gcagcattga cttgggtgaa gatgacatgg agtttggtga agacgacatc
1080
aatttcagtg aggatgacgt cgaggcagtg aacatcccgg agagcctccc acccagtcgt
1140
cgtaacagca acagcaaccc tcctctgccc aggtgctacc agtgcaaagc tgctaaagtg
1200
atcttcatca tcattttctc ctatgtgcta tccctggggc cctactgctt ttagcagtc
1260
ctggccgtgt ggggtgatgt cgaaaccag gtaccccagt gggtgatcac cataatcatc
1320
tggtttttct tcctgcagtg ctgcatccac ccctatgtct atggctacat gcacaagacc
1380
attaagaagg aaatccagga catgctgaag aagttcttct gcaaggaaaa gccccgaaa
1440
gaagatagcc acccagacct gcccggaaca gaggggtggga ctgaaggcaa gattgtccct
1500
tcctacgatt ctgctacttt tccttga
1527

```

<210> 46

<211> 1527

<212> DNA

<213> Homo sapiens

<400> 46

```

atgacgtcca cctgcaccaa cagcacgcgc gagagtaaca gcagccacac gtgcatgccc 60
ctctccaaaa tgcccatcag cctggccccc ggcacatccc gctcaaccgt gctgggttatc 120
ttcctcgccg cctctttcgt cggcaacata gtgctggcgc tagtgttgca gcgcaagccg 180
cagctgctgc aggtgaccaa ccgttttatc tttaacctcc tcgtcaccga cctgctgcag 240
atttcgctcg tggccccctg ggtggtggcc acctctgtgc ctctcttctg gcccctcaac 300
agccacttct gcacggccct ggtagcctc acccacctgt tcgccttcgc cagcgtcaac 360
accattgtcg tgggtgcagt ggatcgctac ttgtccatca tccacctct ctctaccgc 420
tccaagatga cccagcgccg cggttacctg ctctctatg gcacctggat tgtggccatc 480
ctgcagagca ctctccact ctacggctgg ggccaggctg cctttgatga gcgcaatgct 540
ctctgctcca tgatctgggg ggccagcccc agctacacta ttctcagcgt ggtgtccttc 600
atcgtcattc cactgattgt catgattgcc tgctactccg tgggtgttctg tgcagcccgg 660
aggcagcatg ctctgctgta caatgtcaag agacacagct tgggaagtgcg agtcaaggac 720
tgtgtggaga atgaggatga agagggagca gagaagaagg aggagttcca ggatgagagt 780
gagtttcgcc gccagcatga aggtgaggtc aaggccaagg agggcagaat ggaagccaag 840
gacggcagcc tgaaggccaa ggaaggaagc acggggacca gtgagagtag tgtagaggcc 900
aggggcagcg aggaggtcag agagagcagc acggtggcca gcgacggcag catggagggt 960
aaggaaggca gcaccaaagt tgaggagaac agcatgaagg cagacaaggg tcgcacagag
1020
gtcaaccagt gcagcattga cttgggtgaa gatgacatgg agtttggtga agacgacatc
1080
aatttcagtg aggatgacgt cgaggcagtg aacatcccgg agagcctccc acccagtcgt
1140
cgtaacagca acagcaaccc tcctctgccc aggtgctacc agtgcaaagc taagaaagtg
1200

```

atcttcatca tcattttctc ctatgtgcta tccctggggc cctactgctt tttagcagtc
1260
ctggccgtgt ggggtggatgt cgaaaccag gtacccaggt ggggtgatcac cataatcatc
1320
tggcttttct tcctgcagtg ctgcatccac ccctatgtct atggctacat gcacaagacc
1380
attaagaagg aaatccagga catgctgaag aagttcttct gcaaggaaaa gccccgaaa
1440
gaagatagcc acccagacct gcccggaaca gaggggtggga ctgaaggcaa gattgtccct
1500
tcctacgatt ctgctacttt tccttga
1527

<210> 47

<211> 1580

<212> DNA

<213> Homo sapiens

<400> 47

gcaacctgtc tcacgccctc tggtgtgtgc catgacgtcc acctgcacca acagcacgcg 60
cgagagtaac agcagccaca cgtgcatgcc cctctccaaa atgcccata gcctggccca 120
cggcatcac cgtcaaccg tgctgggtat ctctctgcc gcctcttctg tcggcaacat 180
agtgtgtggc ctagtgtgtc agcgcaagcc gcagctgctg cagggtgacca accgttttat 240
ctttaacctc ctgctcaccg acctgctgca gatttctctc gtggccccct ggggtgtggc 300
cacctctgtg cctctcttct ggccccctca cagccacttc tgcacggccc tggtagcct 360
caccacactg ttgccttctg ccagcgtcaa caccattgtc ttggtgtcag tggatcgcta 420
cttgctcatc atccaccctc tctcctacct gtccaagatg acccagcgcc gcggttacct 480
gtcctcttat ggcacctgga ttgtggccat cctgcagagc actcctccac tctacggctg 540
gggccaggct gcctttgatg agcgcaatgc tctctgtctc atgatctggg gggccagccc 600
cagctacact attctcagcg tgggtgtcct catcgtcatt ccactgattg tcatgattgc 660
ctgctactcc gtggtgttct gtgcagccc gaggcagcat gctctgctgt acaatgtcaa 720
gagacacagc ttggaagtgc gagtcaagga ctgtgtggag aatgaggatg aagagggagc 780
agagaagaag gaggagtcc aggatgagag tgagtttctc cgccagcatg aagggtgagg 840
caaggccaag gagggcagaa tgggaagcaa ggacggcagc ctgaaggcca aggaaggaag 900
cacggggacc agtgagagta gtgtagaggc caggggcagc gaggagggtc gagagagcag 960
cacggtggcc agcgacggca gcatggaggg taagggaaggc agcaccaaaag ttgaggagaa
1020
cagcatgaag gcagacaagg gtcgcacaga ggtcaaccag tgcagcattg acttgggtga
1080
agatgacatg gagtttggtg aagacgacat caatttcagt gaggatgacg tcgaggcagt
1140
gaacatcccg gagagcctcc caccagctcg tcgtaacagc aacagcaacc ctctctgccc
1200
cagggtgctac cagtgc aaaag ctgctaaagt gatcttcatc atcattttct cctatgtgct
1260
atccctgggg ccctactgct ttttagcagt cctggccgtg tgggtggatg tcgaaaccca
1320
ggtacccag tgggtgatca ccataatcat ctggcttttc ttctgcagtg gctgcatcca
1380
cccctatgtc tatggctaca tgcacaagac cattaagaag gaaatccagg acatgctgaa
1440
gaagttcttc tgcaaggaaa agccccgaa agaagatagc caccagacc tgcccgaac
1500
agagggtggg actgaaggca agattgtccc ttcctacgat tctgctactt ttccttgaag
1560
ttagttctaa ggcaaacctt
1580

<210> 48
 <211> 1527
 <212> DNA
 <213> Homo sapiens

<220>
 <223> N=A+T+G+C

<400> 48
 atgacgtcca cctgcaccaa cagcacgcgc gagagtaaca gcagccacac gtgcatgccc 60
 ctctccaaaa tgcccatcag cctggcccac ggcatcatcc gctcaaccgt gctggttatc 120
 ttctctgcgc cctctttcgt cggcaacata gtgctggcgc tagtgttgca gcgcaagccg 180
 cagctgctgc aggtgaccaa ccgtttttatc tttaacctcc tcgtcaccga cctgctgcag 240
 atttctgctcg tggccccctg ggtggtggcc acctctgtgc ctctcttctg gcccctcaac 300
 agccacttct gcacggccct ggttagcctc acccacctgt tcgccttcgc cagcgtcaac 360
 accattgtcn tgggtgcagt ggatcgctac ttgtccatca tccaccctct ctctaccgc 420
 tccaagatga cccagcgccg cggttacctg ctctctatg gcacctggat tgtggccatc 480
 ctgcagagca ctctccact ctacggctgg ggccaggtcg cctttgatga gcgcaatgct 540
 ctctgctcca tgatctgggg ggccagcccc agctacacta ttctcagcgt ggtgtccttc 600
 atcgtcattc cactgattgt catgattgcc tgctactccg tgggtgttctg tgcagcccgg 660
 aggcagcatg ctctgctgta caatgtcaag agacacagct tggagtgcg agtcaaggac 720
 tgtgtggaga atgaggatga agagggagca gagaagaagg aggagttcca gtagagagt 780
 gagtttcgcc gccagcatga aggtgaggtc aaggccaagg agggcagaat ggaagccaag 840
 gacggcagcc tgaaggccaa ggaagggaagc acggggacca gtgagagtag ttagaggcc 900
 aggggcagcg aggaggtcag agagagcagc acggtggcca gcgacggcag catggagggt 960
 aaggaaggca gcaccaaagt tgaggagaac agcatgaagg cagacaaggg tcgcacagag
 1020
 gtcaaccagt gcagcattga cttgggtgaa gatgncatgg agtttgggtga agacgacatc
 1080
 aatttcagtg aggatgacgt cgaggcagtg aacatcccgg agagcctccc acccagtcgt
 1140
 cgtaacagca acagcaaccc tcctctgccc aggtgctacc agtgcaaagc tnnnaaagtg
 1200
 atcttcatca tcattttctc ctatgtgcta tccctggggc cctactgctt ttagcagtc
 1260
 ctggccgtgt ggggtggatgt cgaaaccag gtaccccagt gggatgacac cataatcatc
 1320
 tggcttttct tcctgcagtg ctgcatccac ccctatgtct atggctacat gcacaagacc
 1380
 attaagaagg aaatccagga catgctgaag aagttcttct gcaaggaaaa gccccgaaa
 1440
 gaagatagcc acccagacct gcccggaaca gaggggtggga ctgaaggcaa gattgtccct
 1500
 tcctacgatt ctgctacttt tccttga
 1527

<210> 49
 <211> 508
 <212> PRT
 <213> Homo sapiens

<220>
 <223> Xaa=Unknown, modified, or any amino acid

<400> 49
 Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His
 1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile
 20 25 30
 Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly
 35 40 45
 Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln
 50 55 60
 Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln
 65 70 75 80
 Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe
 85 90 95
 Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His
 100 105 110
 Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Xaa Val Ser Val Asp
 115 120 125
 Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr
 130 135 140
 Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile
 145 150 155 160
 Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp
 165 170 175
 Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr
 180 185 190
 Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met
 195 200 205
 Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala
 210 215 220
 Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp
 225 230 235 240
 Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe
 245 250 255
 Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala
 260 265 270
 Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu
 275 280 285
 Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu
 290 295 300
 Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly
 305 310 315 320
 Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys

[illegible]

<213> Artificial Sequence

<223> Description of Artificial Sequence: SNP

21

<213> Artificial Sequence

<223> Description of Artificial Sequence: SNP

21

<210> 52
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SNP

<400> 52
 ggtgaagatg acatggagtt t 21

<210> 53
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SNP

<400> 53
 ggtgaagatg gcatggagtt t 21

<210> 54
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SNP

<400> 54
 gtgcaaagct gctaaagtga t 21

<210> 55
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SNP

<400> 55
 gtgcaaagct actaaagtga t 21

<210> 56
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SNP

<400> 56
 tgcaaagctg ctaaagtgat c 21

<210> 57
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SNP

<400> 57
 tgcaaagctg ataaagtgat c 21

<210> 58
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SNP

<400> 58
 gcaaagctgc taaagtgatc t 21

<210> 59
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SNP

<400> 59
 gcaaagctgc gaaagtgatc t 21

<210> 60
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: GAPDH F3
 Forward primer

<400> 60
 agccgagcca catcgct 17

<210> 61
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: GAPDH R1
 Reverse primer

<400> 61
gtgaaccaggc gcccaatac 19

<210> 62
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: GAPDH-PVIC
Taqman(R) Probe

<400> 62
caaatccgtt gactccgacc ttcacctt 28

<210> 63
<211> 99
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Oligo 1;
N=A+G+C+T and B=C+G+T

<400> 63
cgaagcgtaa gggcccagcc ggccnnbnnb nnbnbnbnbn nbnnbnbnbn bnnbnbnbnb 60
nnbnbnbnbn nbnnbnbnbn bnnbccgggt ccgggcggc 99

<210> 64
<211> 95
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Oligo 2;
N=A+G+C+T and V=C+A+G

<400> 64
aaaaggaaaa aagcggccgc vnnvnnvnnv nnvnnvnnvn nvnnvnnvnn vnnvnnvnnv 60
nnvnnvnnvn nvnnvnnvnn gccgcccgga ccggg 95

<210> 65
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 65
Pro Gly Pro Gly Gly
1 5

<210> 66
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 66
 Gly Asp Phe Trp Tyr Glu Ala Cys Glu Ser Ser Cys Ala Phe Trp
 1 5 10 15

<210> 67
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 67
 Leu Glu Trp Gly Ser Asp Val Phe Tyr Asp Val Tyr Asp Cys Cys
 1 5 10 15

<210> 68
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 68
 Cys Leu Arg Ser Gly Thr Gly Cys Ala Phe Gln Leu Tyr Arg Phe
 1 5 10 15

<210> 69
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 69
 Asn Asn Phe Pro Cys Leu Arg Ser Gly Arg Asn Cys Asp Ala Gly
 1 5 10 15

<210> 70
 <211> 15

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 70
 Arg Ile Val Pro Asn Gly Tyr Phe Asn Val His Gly Arg Ser Leu
 1 5 10 15

<210> 71
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 71
 Arg Ile Asp Ser Cys Ala Lys Tyr Phe Leu Arg Ser Cys Asp
 1 5 10

<210> 72
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic 5' primer

<400> 72
 gcagcagcgg ccgcaccgtg ctggttatct tcctcgccg 39

<210> 73
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic 3' primer

<400> 73
 gcagcagtcg acaggaaaag tagcagaatc gtagg 35

<210> 74
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic 5'

primer

<400> 74
gcagcagcgg ccgcatgacg tccacctgca ccaacagc

38

<210> 75
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic 3'
primer

<400> 75
gcagcagtcg acatagacat aggggtggat gcagcac

37

<210> 76
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 76
Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser
1 5 10

<210> 77
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 77
Gln Leu Leu Gln Val Thr Asn Arg Phe Ile Phe Asn Leu
1 5 10

<210> 78
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 78
Tyr Pro Ser Lys Met Thr Gln Arg Arg Gly Tyr Leu Leu
1 5 10

<210> 79
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 79
Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser
1 5 10

<210> 80
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 80
Glu Gly Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser
1 5 10

<210> 81
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 81
Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys Gly Arg
1 5 10

<210> 82
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 82
Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn Ser Asn
1 5 10

<210> 83

<211> 13
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 83
 Gly Tyr Met His Lys Thr Ile Lys Lys Glu Ile Gln Asp
 1 5 10

<210> 84
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 84
 Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His
 1 5 10

<210> 85
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 85
 Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu
 1 5 10

<210> 86
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 86
 Gly Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys
 1 5 10

<210> 87
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 87

Asp	Asp	Ile	Asn	Phe	Ser	Glu	Asp	Asp	Val	Glu	Ala	Val	Asn
1				5					10				

<210> 88

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 88

Pro	Pro	Lys	Glu	Asp	Ser	His	Pro	Asp	Leu	Pro	Gly	Thr	Glu
1				5					10				

<210> 89

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 89

Leu	Leu	Tyr	Asn	Val	Lys	Arg	His	Ser	Leu	Glu	Val	Arg	Val
1				5					10				

<210> 90

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 90

Ser	Leu	Pro	Pro	Ser	Arg	Arg	Asn	Ser	Asn	Ser	Asn	Pro	Pro
1				5					10				

<210> 91

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

polypeptide

<400> 91

Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser
 1 5 10

<210> 92

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 92

Ser Thr Arg Glu Ser Asn Ser Ser His Thr Cys Met Pro Leu
 1 5 10

<210> 93

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 93

Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu Ala
 1 5 10

<210> 94

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 94

Ile Ser Leu Ala His Gly Ile Ile Arg Ser Thr Val Leu Val Ile Phe
 1 5 10 15

<210> 95

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 95

Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr Thr Ile Leu Ser Val
 1 5 10 15

<210> 96

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 96

Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser Thr Gly
 1 5 10 15

<210> 97

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 97

Leu Lys Ala Lys Glu Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu
 1 5 10 15

<210> 98

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 98

Lys Glu Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly
 1 5 10 15

<210> 99

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 99

Thr Val Ala Ser Asp Gly Ser Met Glu Gly Lys Glu Gly Ser Thr Lys
 1 5 10 15

<210> 100
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 100
 His Pro Asp Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly Lys Ile Val
 1 5 10 15

<210> 101
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 101
 Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly Lys Ile Val Pro Ser Tyr
 1 5 10 15

<210> 102
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 102
 Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met Ile Ala Cys
 1 5 10 15

Tyr Ser Val Val Phe
 20